FOK MACHINES

FIBRE OPTIC CABLE BLOWING MACHINE USER'S BOOK

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FIBER OPTIC CABLE BLOWING MACHINES

ABOUT US

Our company ever since its incorporation in the telecommunication sector has been operating the machine. Our company since its establishment until the superior service quality and customer satisfaction continues to be one of the leading companies.

Fiber Optic Cable Blowing Machine (FOK), a single supplier and telecommunication in TURKEY. Turk Telekom, Turkcell and the VODAFONE'S FOK uses subcontractors in Turkey. According to information from users FOK in 1999 to the present continuous revisions are made more useful.

Our services include; machine spare parts manufacturing, a complete machine manufacture, stockpiling of machine parts, components or systems required the development of machines with the development of R & D activities are.

Our Vision

Profitable and sustainable growth to ensure long-term customer and employee satisfaction, and satisfaction as well as aims.

Our Mission

High standards, quality service in the time of our customers to maximize customer satisfaction and respect the rights. Our products, solutions, after sales service we provide our customers with reliability and high business ethics as the first choice to be a company that creates value for our employees and our customers.

Our Quality Policy

The fact that customer satisfaction as a priority action in this direction is to provide products and services.

For this reason,

- *Complying with the terms of the quality management system, to sustain activity.*
- *Ethics, values, respect and team spirit, and the potential to increase customer satisfaction.*
- *Improve the competitiveness of the industry by continuously improving staff satisfaction and education.*
- *Our employees, customers, suppliers long-term commitment to our organizations and institutions to increase non-cooperation.*
- *The provisions of relevant laws and standards to export to the framework.*

FOK MACHINES

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USER'S BOOK

1 SELECTING AND LOCATING CABLE SEALS

2 SETTING AXIS FOR CABLE DIAMETER

3 PREPARING PULLEYS

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11 SAFETY RULES

12 TRANSPORTING MACHINE

13 CORRECTION OF FAULTS

14 TOOLS GIVEN WITH MACHINE

1 SELECTING AND LOCATING CABLE SEALS

Figure 1

Figure 2

Figure 3

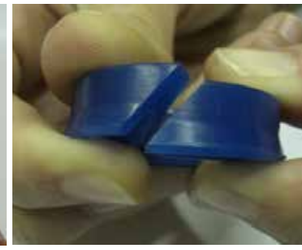


Figure 4

Firstly measure cable diameter with callipers (***figure 1***). The selected cable seal's inside diameter (***figure 2***) must be same with cable's outside diameter and it must work slippery on cable (***figure 3***) not to let air leak. Cut cable seals as you see on ***figure 4***.

NOTE: You must inform us your cable diameter that you will install with your FOK order.

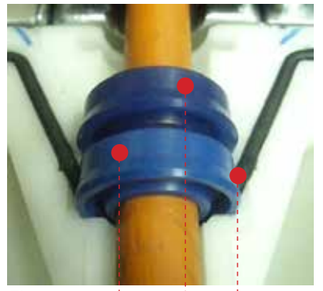


Figure 5

Canals of the selected cable seals must locate to install way of cable. If not ,we can not use compressed air productive which comes from compressor (***figure5-1***).

Touch faces of black o-rings with cable seals must be cutted angular (***figure5-2***)

2 SETTING AXIS FOR CABLE DIAMETER

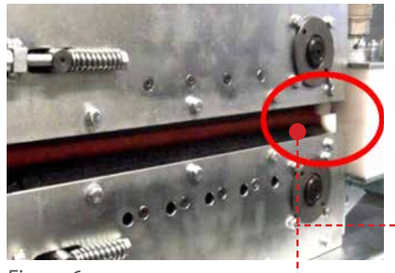


Figure 6-a

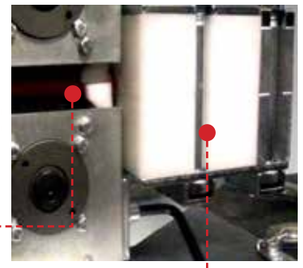


Figure 6-b

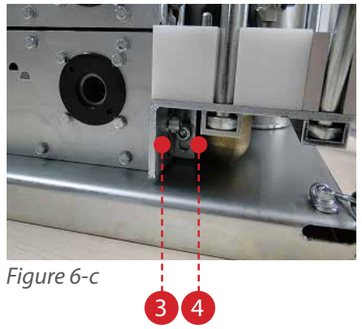


Figure 6-c

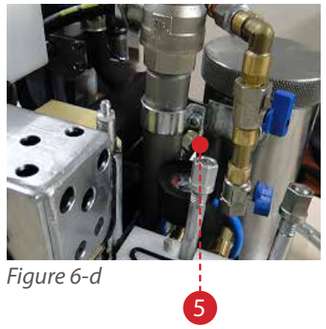


Figure 6-d

Axis of the machine must be set, when the cable diameter is changed to make productive blowing. Locate the cable you will blow into machine as seen on ***figure 6-a*** to set axis. Loosen bolts (***Number 3.4 and 5***) and set on same level cable axis in machine (***No: 1***) with touch face (***No: 2***) between up and down exit box parts. Then setting axis press bolts (***3, 4, 5, numbers on figure 6-c / 6-d***) to fix axis for your cable.

NOTE: If you inform our company about your cable diameter before you buy machine, machine axis will be setted by our company. When you will blow different cablediameter, you will have to set axis as we explained up wrench set will be given with machine.

3 PREPARING PULLEYS

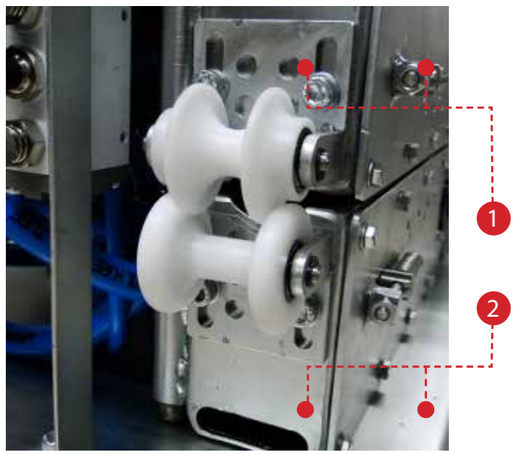


Figure 7

Pulleys on figure enable the cable to go into the machine on axis easily. Pulleys' distance is set by bolts (***No: 1, 2 on Figure 7***) for cable diameter. Pulleys' distance must be closed, if not, cable can get out from sides and break.

NOTE: Selecting cables, setting cable axis, preparing pulleys are done when the cable diameter is changed.

4 LOCATING PRE-INSTALLED DUCT AND CABLE

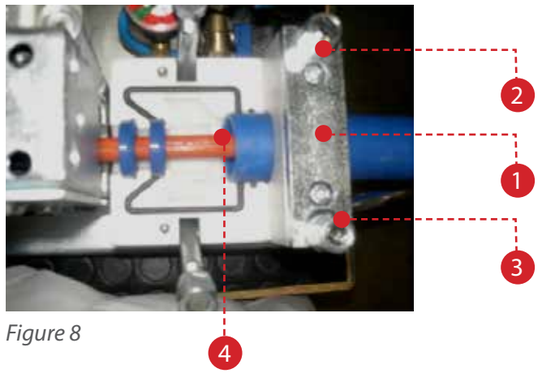


Figure 8

Loosen bolts (***No: 2, 3 on figure 8***) firstly to assemble Duct to machine and then leave the upper part (***No: 1***) . Drive duct until the face number 4. Then put the upper part (***No: 1***) on cable and press bolts (***No: 2, 3***) to finish duct assemble Locate cable into machine as shown on ***figure 8***.

NOTE: Selecting cables, setting cable axis, preparing pulleys are done when the cable diameter is changed.

5 MAKING AIR CONNECTIONS COMING FROM AIR COMPRESSOR

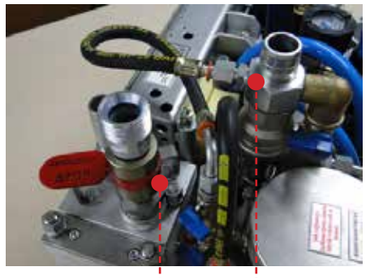


Figure 9-a

Figure 9-b

Figure 9-c

Connect 1"air hose to machine with quick connection which comes from air compressor. Quick connection main body is assembled on machine as you see ***figure on 9-a-1***. Quick connection moving part is given with machine as you see in ***figure 9-a-2***. Assemble quick connection moving part to the machine as you see in ***figure 9-b***. Connect air hose to the part 3 in ***figure 9-b***. Then assemble parts as you see in ***figure 9-c***.

6 PRESSURE GAUGES, PRESSURE VALUES AND SETTING PRESSURES

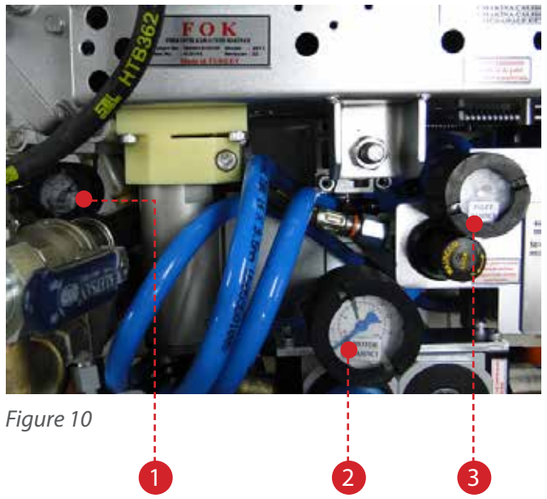


Figure 10

1. **Duct Pressure Value**; Duct blowed in world standards must have minimum 10,5 bar (You must see this value on gauge shown in ***figure 10-1***) to blow your cable. If not, you can't blow your cable.

2. **Air Motor Pressure**; You must see 6.5-7 bar on gauge (***figure 10-2***) when you are blowing. If you work on higher values this will cause your motor pulleys to be damaged and your air motors will break down.

3. **Pallettes Pressure Value**; Pneumatic piston supplies pallette pressure. This system prevents the wear on your cable between pallettes. You must set this pressure value with checking weather conditions. Your cable mustn't skid between pallettes in normal conditions this value range must be between 2-4 bars.

NOTE: Setting air engine pressure and palette pressure is explained on the next page. There is no pressure setting for DUCT

A- SETTING PALETTE PRESSURE

Figure 11

Figure 12

You can set piston pressure (***figure11-1***) on palettes with using regulator (***figure12-2***) and you can control pressure on gauge (***figure12-3***). Do not increase pressure value too much if you increase it you can damage your cable and air motors.

B- SETTING AIR MOTOR PRESSURE LUBRICATION STYLE

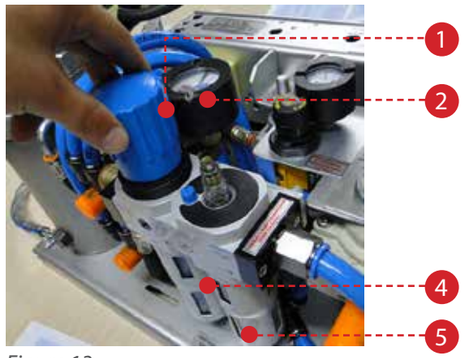


Figure 13

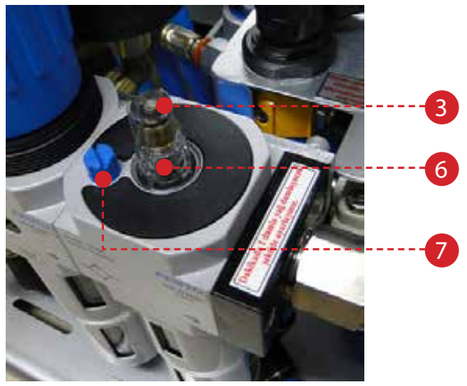


Figure 14

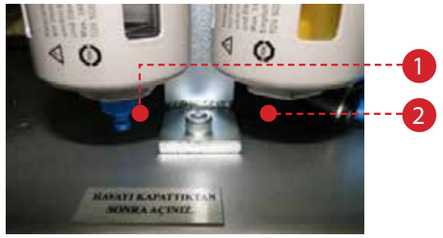


Figure 15

Use the mechanism (***figure 13-1***)to set pressure of air motors and control on qauge (***figure13-2***). Air motors must work between 6.5-7 bar.

The reservoir (***figure 13-4***) takes moisture of pressurized air which comes from compressor. Use tap (***figure 15-1***) to discharge collected moisture. You must do this operation not to let rust the parts of air motors.

Put oil for air motors to reservoir (***figure 13-5***). And use screw (***figure 15-2***) to re-fill it. This is necessary to lubricate bearings of air motors.

When the blue stopper opened (***figure 14-7***) lubrication for air motors will be closed

Use screwdriver (***figure14-3***) to set the amount of oil for air motors.

Current amount of oil is one drop in one minute. You can see drop in (***figure 14-6***).

NOTE: Our FOK is ready to install cable after making the configurations we stated as number 1,2,3,4,5,6 in earlier pages. We can start to install our cable by using direction control valve.

7 USING SHOCK LUBRICANT

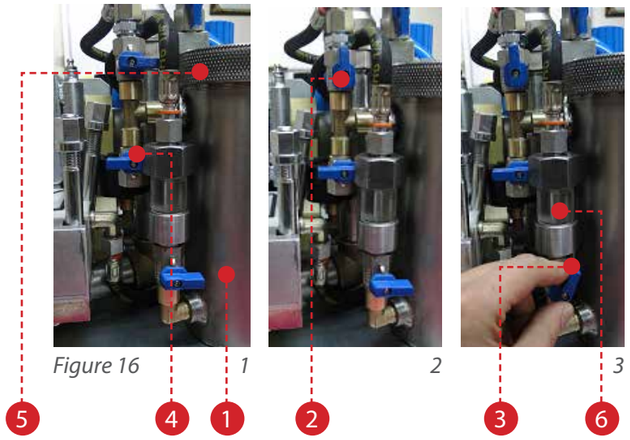


Figure 16 *1* *2* *3*

To reduce friction between cable and duct put special oil (lubricant) into reservoir (***Figure 16-1-1***). You may see the closed position for lubricant valves on ***figure16-2***. To let oil into duct open valve (***figure 16-2-2***) then open-close valve in a short time (***figure 16-3-3***) This quick open-close move will let oil into duct.

You may check duct lubricant from indicator (***figure 16-3-6***) to re-fill reservoir,open valve (***figure 16-1-4***) and discharge pressurized air.Then this discharge close valve. Then open reservoir lid. (***figure 16-1-5***) and put lubricant oil and close lid again tightly until there is no air leak

8 USING DIRECTION CONTROL VALVE

Figure 17

You can regulate fibre optic cable direction and speed (0-60m/min) by moving direction control valve to right or left.

NOTE: You must use stop position when you are changing the direction.If you pass the opposite direction directly and don't stop on stop position this will damage the gears of air motors.

9 USING PALETTE CONTROL VALVE

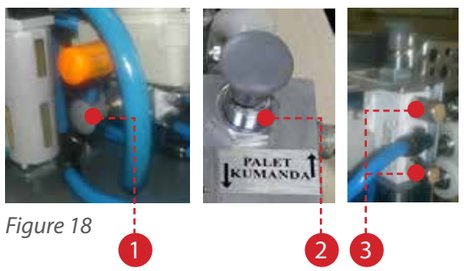


Figure 18

Palettes can join or leave with buttons on ***figure 18-1*** and ***figure 18/2***. Push or pull button on ***figure 18-2*** while pushing button 18-1.You can set movement velocity of upper palettes by using valves on ***figure 18-3***.

10 FOK MAINTENANCE INSTRUCTIONS

Figure 18

Figure 19

<u>To maintain air motors, open oil set screw until end (***Figure 18-1***) and run motors 30-35 secs on this position. This operation supplies bearing lubrication for air motors and parts.</u>

This operation must be repeated in every evening after the work ends, if not the moisture collected in motors will cause the bearings to rust.

The foreign objects entering into reservoir (***figure 18-2***) causes to the filter be blocked. This changes its colour and its shape. You must change this filter before this case occurs, if not air pressure yield will be less and you will have problems about the machine.

You can see the demontaging of air filter on ***figure 19***. Firstly open reservoir (***figure 19-1***) and nut (***figure 19-2***) then you can take air filter (***figure 19-3***)

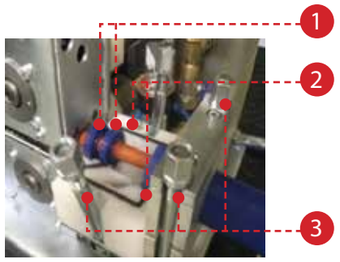


Figure 20

Put out cable seals (***figure20-1***) and o-rings (***figure20-2***) to make care of exit box (***figure 20***). Clean their slots with diesel oil and brush. If cable seals and orings are beaten, change them otherwise there will be air leak.

Figure 21

Locate your cable in to machine as shown in ***figure 22***. Pallettes must press to cable and pallettes mustn't touch each other. If they touch, this means your pallettes are worned away. Pallettes must be changed.

Figure 22

Figure 23

If the blowing area is muddy, mud can go into the palettes of the machine, you may clean mud with pressured water and using holes as you may see on ***figure 22 and 23***.

11 SAFETY RULES

If there is something happens unusual on machine push emergency button to get out pressurised air from machine then close compressor quickly.

Do not open cover before evacuating air on box.

Close nuts correctly before giving air on machine. If nuts and bolts are beaten changethem with new ones.

If there is something happens unusual on machine push emergency button to get out pressurised air from machine then close compressor quickly.

Do not open water tap and oil jar before evacuating air on machine

You must check quick connection before giving air to machine. Take up quick connection part as you see in ***figure 24*** to check it. Do not use if it is coming up.

Figure 24

12 TRANSPORTING MACHINE

Figure 25

After taking out in box. Carry cable blowing machine as on ***figure 25***.

Figure 26

Carry cable blowing machine as on ***figure 26***.

IMPORTANT NOTE: Take out air on machine before carring machine.

13 CORRECTION OF FAULTS

If your machine can not catch cable and palettes skids on cable ,it means that your palettes are damaged and needs to change or palette pressure is low. ***(Look 6/6-A)***
If cable exit box squeeze cable it means that cable seals are false chose correct cable seals. ***(Look 1)***
If there is oil or air leaking on exit box palettes side it means that your cable seals are false or montaged false direction. ***(Look 1)***
If there is air leaking on exit box, clean surfaces of exit box and change o-rings. ***(Look 10)***
If your machine is working hardly while you are blowing cable, it means that your ducts air pressure can be less, you need to increase your air pressure which is coming from compressor. It must be minimum 12 bar / 10.5 metercup / minute. ***(Look 6)***
If your cable blowing machine is working but you can not blow cable in ducts it means that your ducts can be plugged. You need to solve the problems in ducts. ***(Look 15-1)***
If palettes of cable blowing machine is not turning it means that bearings are damaged because of slogging or bearings are rusted because of being in wet situation. You must send machine for maintenance.
If your air motor is not not turning it means that bearings of air motor are damaged you need to send machine to maintenance. ***(Look 6-b)***
If your air motor is not not turning it means that gears are damaged you need to change gears. You must send machine for maintenance.
If your air pressure on motors are reducing while you are cable blowing it means that your air filter is plugged or damaged you need to change it. ***(Look 10)***

14 TOOLS GIVEN WITH MACHINE

USE OF MACHINE TOOLS

1.	Socket wrench arm set ("T" arm)	**1 Qty**
2.	Socket wrench arm set mid part (Long: 25 cm)	**1 Qty**
3.	Socket wrench (16-13)	**1 Qty**
4.	Open-End wrenchs (8-9 / 10-11)	**1 Qty**
5.	Allen wrench (5mm, 6mm)	**1 Qty**
6.	Screw driver (3x80)	**1 Qty**
7.	Stationery knife	**1 Qty**
8.	Special air lubricant oil	**1 Qty**
9.	O-Ring (Ø95x5)	**1 Qty**
10.	Ø 3,5 O-Ring 50 cm	**1 Qty**
11.	Ø 4 O-Ring 50 cm	**1 Qty**
12.	Ø 8 Air pipe 100 cm	**1 Qty**
13.	Ø14 Air pipe 2 mt	**1 Qty**
14.	Ø 16 Air pipe 50 cm	**1 Qty**

NOTE: We set axis line of FOK with the information of cable diameter before sending the machine. We send 10 pieces cable seals, 1 piece cable seal slot and 3 pieces of felts with machine for your cable diameter. You can see cable diameter groups under, but if you inform us your cable diameter this will be better.

A) CABLE FOR 4 FOY-6 FOY-12 FOY-24 FOY;

a- Exit box cable seal slot	1 Qty
b- Cable seal 17x32x10	10 Qty
c- Oil felt	3 Qty

B) CABLE FOR 36 FOY-48 FOY-60 FOY;

a- Exit box cable seal slot	1 Qty
b-Cable seal 18x30x8,5	10 Qty
c- Cable seal 20x30x8	10 Qty
d- Oil felt	3 Qty

C) CABLE FOY 96 FOY;

a- Exit box cable seal slot	1 Qty
b- Cable seal 22x32x8	10 Qty
c- Oil felt	3 Qty

D) CABLE FOR 144 FOY-192 FOY;

a- Exit box cable seal slot	1 Qty
b- Cable seal 28x40x10	10 Qty
c- Oil felt	3 Qty

15 WORKING LAND TERMS

CONDITIONS FOR FIBRE OPTIC CABLE BLOWING MACHINE PRODUCED BY KOSMAK MACHINE BUILDING, INDUSTRY&TRADE CO. THAT YOU HAVE TO CHECK ON WORKING AREA BEFORE YOU START TO WORK.

1) DUCT CONTROL

USE NATURAL GAS PIPE (DIA:25MM,LENGTH:1.5m) BOTH SIDE CLOSED TO CONTROL DUCT.THIS PIPE MUST PAS ALL ALONG IN YOUR DUCT.

2) MACHINE CONTROL

MONTAGE THE MACHINE TO PIPE AND LET PRESSURIZED AIR IN,AFTER YOU CHECKED THE SUITABILITY OF YOUR DUCT. WHEN PRESSURIZED AIR WENT OUT FROM THE END OF DUCT, YOU MUST SEE THESE VALUES: AIR MOTOR PRESSURE: 6 BAR /// PISTON PRESSURE:2-4 BAR /// DUCT PRESSURE: 10.5 BAR (MACHINE AXIS MUST BE SET TO RUN)

3) WORKING CONTROL

YOU MUST TRY TO STAY IN SAME LEVEL AS FAR AS POSSIBLE DUCT,MACHINE AND FIBRE OPTIC CABLE YOU MUST HAVE THESE VALUES WHEN YOU ARE RUNNING MACHINE: AIR MOTOR PRESSURE: 6 BAR /// PISTON PRESSURE:2-4 BAR DUCT PRESSURE:10-11 BAR. CHECK OIL DROP VALUE THAT YOU NEED FOR AIR MOTORS ON AIR LUBRICANT(2-3 DROPS/MIN) YOU MUST DO SHOCK LUBRICATION IN EVERY 150 METRES YOU INSTALLED. YOU MUST LEAVE INSIDE OF AIR MOTORS OILY AFTER YOU USE THE MACHINE .TO DO THIS:LOOSEN THE OIL SET SCREW ON PREPERATION AIR LUBRICANT AND INCREASE THE SPEED OF OIL FLOW AND RUN MACHINE 3-4 MINS IN THIS POSITION.

EC DECLA-RATION OF CONFIRMITY

KÖSMAK MAKİNA İNŞAAT TAAHHÜT SANAYİ VE TİCARET LİMİTED ŞİRKETİ

According to Machinery Directive 2006/42/EEC

Manufacturer:

KÖSMAK Makine İnşaat Taahhüt San. ve Tic. Ltd. Şti.
Küçük Körfez Sanayi Sitesi 201 Blok No:4 KOCAELİ / TURKEY

Declaration:

Herewith we declare under our own responsibility that the products designated below

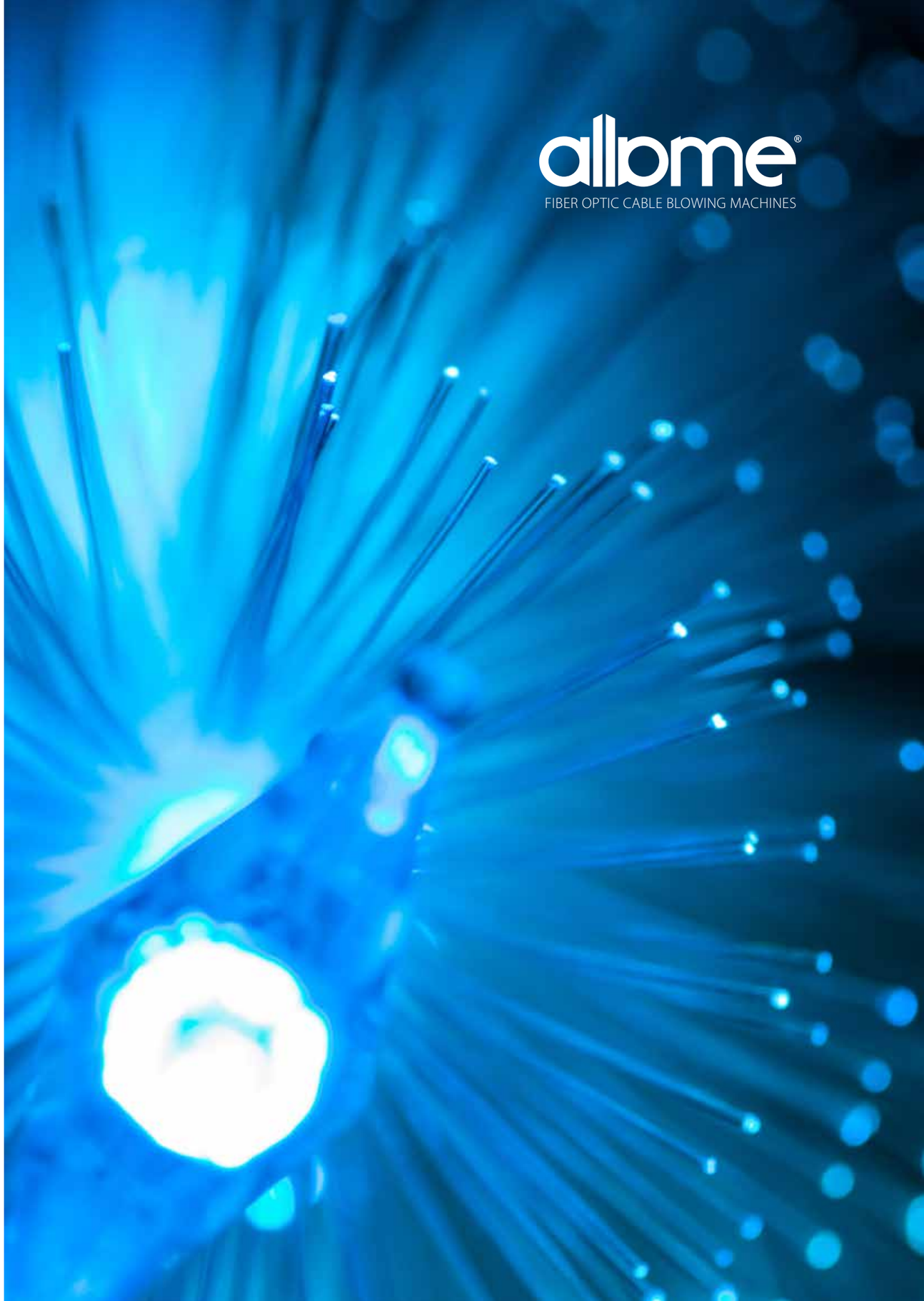
Products:

KOS type of fiber optic cable blowing machine
are manufactured in accordance with the EC Directives

Directives:

Managing Director
Machinery Directive 2006/42/EEC including their amendments.
Harmonised Standards: TS EN ISO 12100, EN 60204-1
Kocaeli , 2014

CE



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FIBER OPTIC CABLE BLOWING MACHINES

Körfez Küçük Sanayi Sitesi 13. Blok
No:8 41040 İzmit, Kocaeli, TURKEY

0090 533 778 9941

fokmachine.com

info@**fokmachine**.com

sedatgever.com